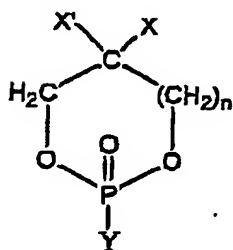


CLAIMS:

1. A compound of the following formula (I):



or pharmaceutically acceptable salts thereof,

wherein:

n is 1;

X is hydrogen, O-R, NH-R, NO₂, or N-(C=O)-R;

X' is hydrogen or CH₂OH;

Y is O-R₁, NH-R₁;

R is hydrogen, linear or branched alkyl, linear or branched acyl, substituted or non-substituted aryl or aralkyl residue;

R₁ is hydrogen, linear or branched alkyl, linear or branched acyl, substituted or non-substituted aryl, alkylcarboxy ester or alkyl-N-R₂R₃;

R₂ and R₃ are independently hydrogen or an alkyl group;

alkyl is an alkyl group having from 1 to 24 carbon atoms, preferably from 3 carbon atoms to 20 carbon atoms, most preferably from 5 carbon atoms to 15 carbon atoms;

wherein acyl is an aliphatic saturated or unsaturated C₁ - C₂₄ acyl group, preferably an acyl group having an even number of carbon atoms, and most preferably an acyl group derived from a natural fatty acid such as a saturated aliphatic acyl group or an unsaturated aliphatic acyl group;

aryl is a to a mono- or poly-carbocyclic aryl group, most preferably phenyl, optionally substituted by C₁-C₄ -alkyl, halogen and/or hydroxy;

provided that X and X' can not both be hydrogen; when X is NH-R where R is a linear or branched acyl Y is not OR₁ for R₁ being a 4-nitrophenyl; and further provided that when X' is CH₂OH then X is NH-R or NO₂.

2. A compound according to claim 1, wherein the acyl moiety is selected from the group comprising of acetyl, butyryl, caproyl, octanoyl, decanoyl, lauroyl, myristyl, palmitoyl and stearoyl, palmitoleyl, oleyl, linoleyl, and ricinoleyl.

3. A compound according to claim 1 wherein Y is OH and X is O-R or NH-R; wherein R is a linear or branched alkyl or linear or branched acyl.

4. A compound according to claim 1 wherein X is hydrogen and Y is O-R₁ or NH-R₁; wherein R₁ is a linear or branched acyl.

5. Compounds of formula I according to claim 1 selected from the group consisting of:

- (a) 1,3-cyclic propandiol phosphate-5-oleoyl;
 - (b) 1,3-cyclic propandiol phosphate-5- benzyloxy;
 - (c) 1,3-cyclic propandiol phosphate-5- benzylamino;
 - (d) 1,3-cyclic propandiol phosphate-5- caproylamido;
 - (e) 1,3-cyclic propandiol phosphate-2-benzyloxy;
 - (f) 1,3-cyclic propandiol phosphate-2- acetyloxy;
 - (g) 1,3-cyclic propandiol phosphate-2-methylamino;
 - (h) 1,3-cyclic propandiol phosphate-5-glycine ethylester;
 - (i) 2-dimethylamine ethyl ester 1,3-cyclic propanediol phosphate;
 - (j) 1,3-cyclic propanediol phosphoamidate;
 - (k) 1,3-cyclic propanediol N-ethyl phosphoamidate;
 - (l) 1,3-cyclic propanediol phosphoamidate glycine ethylester;
 - (m) 2-benzyloxy 1,3-chloropropanediol phosphate;
 - (n) 2-caproimido 1,3-chloropropanediol phosphate;
 - (o) 5-amino-5-hydroxymethyl-2-oxo-2λ5-[1,3,2]dioxaphosphinan-2-ol;
 - (p) 5-nitro-5-hydroxymethyl-2-oxo-2λ5-[1,3,2]dioxaphosphinan-2-ol;
- or pharmaceutically acceptable salts thereof.

6. A pharmaceutical composition comprising a pharmaceutical acceptable carrier and, as an active ingredient, a compound of the general formula (I) in claim 1 or pharmaceutically acceptable salt thereof.

7. A pharmaceutical composition according to claim 6, for promoting neural activity.

8. A pharmaceutical composition according to claim 7, wherein said neural activity is selected from the group consisting of promotion of neuronal outgrowth, promotion of nerve growth, provision of dopaminotrophic supporting environment in a diseased portion of the brain, prevention of nerve degeneration and nerve rescue.

9. A pharmaceutical composition according to claim 8, wherein said neuronal outgrowth is axonal growth or axonal branching.

10. A pharmaceutical composition according to claim 6, for the prevention or treatment of disorders and diseases which can be prevented or treated by activating neural cells.

11. A pharmaceutical composition according to claim 8, wherein said disorder and disease are schizophrenia, dementia or disorder resulting from learning disabilities.

12. A pharmaceutical composition according to any one of claims 6 to 11 wherein the compound of formula I is selected from the group consisting of

(a) 1,3-cyclic propandiol phosphate-5-oleoyl;

(b) 1,3-cyclic propandiol phosphate-5- benzyloxy;

(c) 1,3-cyclic propandiol phosphate-5- benzylamino;

(d) 1,3-cyclic propandiol phosphate-5- caproylamido;

(e) 1,3-cyclic propandiol phosphate-2-benzyloxy;

(f) 1,3-cyclic propandiol phosphate-2- acetyloxy;

(g) 1,3-cyclic propandiol phosphate-2-methylamino;

(h) 1,3-cyclic propandiol phosphate-5-glycine ethylester;

(i) 2-dimethylamine ethyl ester 1,3-cyclic propanediol phosphate;

(j) 1,3-cyclic propanediol phosphoamidate;

- (k) 1,3-cyclic propanediol N-ethyl phosphoamidate;
 - (l) 1,3-cyclic propanediol phosphoamidate glycine ethylester;
 - (m) 2-benzyloxy 1,3-chloropropanediol phosphate;
 - (n) 2-caproimido 1,3-chloropropanediol phosphate;
 - (o) 5-amino-5-hydroxymethyl-2-oxo-2λ5-[1,3,2]dioxaphosphinan-2-ol;
 - (p) 5-nitro-5-hydroxymethyl-2-oxo-2λ5-[1,3,2]dioxaphosphinan-2-ol;
- or pharmaceutically acceptable salts thereof.

13. Use of a compound of formula I for the preparation of a medicament for treating disorders and diseases which can be prevented or treated by activating neural cells.

14. Use according to claim 13, wherein said neural activity is selected from the group consisting of promotion of neuronal outgrowth, promotion of nerve growth, provision of dopaminotrophic supporting environment in a diseased portion of the brain, prevention of nerve degeneration and nerve rescue.